

January 12-14, 1983

INTERNATIONAL CONFERENCE ON  
THE CHEMISTRY AND BIOLOGY OF  $\alpha_2$ -MACROGLOBULIN

Morris Shamos, Ph.D., President  
Dennis Kelly, Ph.D., Chairman, Conference Committee  
Ellen A. Marks, Conference Director

All sessions held at  
THE BARBIZON PLAZA HOTEL  
106 Central Park South  
New York, N.Y. 10019

Registration fee:  
Members NYAS  
Nonmembers  
No charge to Student Members of  
the Academy, and Speakers

WEDNESDAY, JANUARY 12, 1983

\*CONFIRMED SPEAKERS

CONFERENCE CHAIRMAN

Richard D. Feinman, Ph.D.  
Department of Biochemistry  
SUNY Downstate Medical Center  
450 Clarkson Avenue  
Brooklyn, NY 11203

8.00 A.M. REGISTRATION

9.00 A.M. - 9.15 A.M.

GREETINGS FROM THE ACADEMY

Morris Shamos, Ph.D.  
President, The New York Academy of Sciences

OPENING REMARKS

Richard D. Feinman, Ph.D. Conference Chairman

9:15 - 10:50 AM

SESSION 1. BACKGROUND AND INTRODUCTION

\* Chairman: Fred Maxfield, Ph.D.  
NYU Medical Center, N.Y., N.Y. 10016

9:15 - 9:40 A.M.

\* 1.  $\alpha_2$ -Macroglobulin: An introduction

Peter C. Harpel, M.D.  
Cornell University Medical Center, N.Y., N.Y. 10021

Discussion (5 min.)

9:40 - 10:15 A.M.

\* 2. Enzymatic Formation of  $\epsilon(\gamma\text{-glutamyl})\text{lysine}$  Cross-links in Proteins

Laszlo Lorand, Ph.D.,  
Northwestern University, Evanston, Illinois 60201

Discussion (5 min.)

10:15 - 10:50 AM

3. Thiol Esters and Concerted Acyl Transfer Reactions.

Sidney A. Bernhard, Ph.D., University of Oregon  
Eugene, Oregon.

General Discussion (15 min.)

10:50 - 11:15 Intermission

11:15 - 12:40

SESSION 2. STRUCTURE I

\* Chairman: Thomas Finlay  
NYU Medical Center  
New York, N.Y. 10021

11:15 - 11:40

\* 4. Primary Structure of  $\alpha_2$ M and localization of a factor XIIIa cross linking site

Lars Sottrup-Jensen, Ph.D., Terrence M. Stepanik, Ph.D., Diane M. Wierbicki,  
Ph.D., Clare M. Jones, Ph.D., Peter B. Lonblad, Ph.D., Torsten Kristensen,  
Ph.D., Torben E. Petersen, Ph.D. and Staffan Magnusson, Ph.D.

Discussion (5 min.)

11:40-12:05

\* 5. Specificity of Enzymes for the "Bait" Region of  $\alpha_2$ M.

Ronald C. Roberts, Ph.D., and Philip K. Hall, M.S.  
Marshfield Medical Foundation, Marshfield, Wisconsin 54449

Discussion (5 min.)

12:05 - 12:40

6. Reactive sites in  $\alpha_2$ -Macroglobulin.

James Bryant Howard, Ph.D.  
Dept. of Biochemistry, University of Minnesota Minneapolis, Minnesota 55455

General Discussion (15 min).

12:40 - 2:00 Lunch Break

2:00-5:05

### SESSION 3. STRUCTURE II AND METHODS

- \* Chairman: Fred van Leuven, Ph.D.

Center of Human Genetics University of Leuven, Leuven, Belgium

2:00 - 2:25

- \* 7. Asymmetrical localization of the two protease binding sites of  $\alpha_2$ -macroglobulin

Dr. Francois Pochon, Centre Universitaire Orsay, France

Discussion (5 min.)

2:25 - 2:50

- 8. Low Angle X-ray Scattering Studies of  $\alpha_2$ -Macroglobulin.

B. Branegard, Ph.D., R. Osterberg, Ph.D. and B. Sjoberg, Ph.D.  
University of Goteborg, Goteborg, Sweden

Discussion (5 min.)

2:50 - 3:25

- 9. (To be determined)

General Discussion (15 min.)

3:25 - 3:40 INTERMISSION

3:40 - 4:05

- \* 10. Changes in Intrinsic Fluorescence in  $\alpha_2$ M Reactions.

Patrick A. McKee, M.D. and David L. Straight, Ph.D.  
Duke University Medical Center, Durham, NC 27710

Discussion (5 min.)

4:05 - 4:30

- \* 11. Immunoassay of  $\alpha_2$ M-Enzyme Complexes

Peter C. Harpel, M.D.  
Cornell University Medical College, New York, NY 10021

Discussion (5 min.)

4:30 - 5:05

- 12. (To be determined)  
General Discussion (15 min.)

THURSDAY, JANUARY 13, 1983

9:00 - 12:10

SESSION 4. MECHANISM

Chairman: (To be determined)

9:00 - 9:25

13. (Title not determined)

James Bryant Howard, Ph.D. and Richard P. Swenson, Ph.D.  
University of Minnesota, Minneapolis, MN 55455

Discussion (5 min.)

9:25-9:50

\* 14. Role of Lysyl Amino Groups in the  $\alpha_2$ M-protease Reaction.

Richard D. Feinman, Ph.D., and Dalton Wang, Ph.D.  
SUNY Downstate Medical Center, Brooklyn, NY 11203

Discussion (5 min.)

9:50 - 10:25

\* 15. Generation and Reactivity of "Nascent"  $\alpha_2$ M. Localisation of crosslinks in  $\alpha_2$ M-trypsin complex.

Lars Sottrup-Jensen, Ph.D., H. Frede Hansen, Ph.D., Torben E. Petersen, Ph.D. and Staffan Magnusson, Ph.D.

General Discussion (15 min.)

10:45 - 11:10

\* 16. Interaction of Protein Substrates and Inhibitors with  $\alpha_2$ -Macroglobulin Bound Proteinases.

Joseph G. Bieth and Dr. Francois Pochon  
Inserm, Strasbourg, France and Institut Curie Orsay, France.

Discussion (5 min.)

11:10 - 11:35

\* 17. Characteristics of  $\alpha_2$ M-Bound Protease Complexes

Dalton Wang, Ph.D.,  
SUNY Downstate Medical Center, Brooklyn, N.Y. 11203

3:45 - 4:10

22. (Title to be determined)

Michael K. Pangburn, Ph.D. and Hans J. Muller-Eberhard, M.D.  
Research Institute of Scripps Clinic, La Jolla, California 92037

Discussion (5 min.)

4:10 - 4:40

23. (Title to be determined)

David E. Isenman, Ph.D.  
University of Toronto, Toronto Ontario M5S 1A8

General Discussion (10 min.)

FRIDAY, JANUARY 14, 1983

9:00 - 12:10

SESSION 6. PHYSIOLOGY AND MEDICINE

9:00 - 9:25

24. Interaction of  $\alpha_2$ M with cells

Phyllis M. Starkey  
University of Oxford, Oxford, UK.

Discussion (5 min.)

9:25 - 9:50

25. Interaction of  $\alpha_2$ M with Kallikrein and other plasma proteases.

Guy Salvesen Ph.D., G.D. Virca, Ph.D. and James Travis, Ph.D. University  
of Georgia, Athens, Georgia 30602

Discussion (5 min.)

9:50 - 10:25

26. Synthesis of  $\alpha_2$ -Macroglobulin by Cultured Adherent Cells.

Deane Mosher, Ph.D. and Diane Rider, Ph.D.

Discussion (5 min.)

10:25 - 10:40 INTERMISSION

10:45 - 11:10

Discussion (5 min.)

11:35 - 12:10

18. (To be determined)

General Discussion (15 min.)

12:10 - 2:00 LUNCH

2:00 - 4:35

#### SESSION 5. COMPLEMENT PROTEINS

Chairman: James Bryant Howard, Ph.D.

University of Minnesota, Minneapolis, MN 55455

2:00 - 2:25

- \* 19. Biological implications of the Thiolester Bond in Several Eukaryotic Proteins

Brian F. Tack, Ph.D.

Harvard University, Cambridge, MA

Discussion (5 min.)

2:25 - 2:50

- \* 20. Covalent Interaction Between C3b and Cell Surface Macromolecules

R.P. Levine, Ph.D.

Washington University, St. Louis, MO 63130

Discussion (5 min.)

2:50 - 3:25

- \* 21. Binding Reaction of C3 and C4

Sai-Kit A. Law, Ph.D.

University of Oxford, Oxford, UK

General Discussion (15 min.)

3:25 - 3:45 INTERMISSION

Discussion (5 min.)

- \* 27. Proteolytic Activity of  $\alpha_2$ -Macroglobulin-Protease Complexes: Implications for Emphysema

Thomas H. Finlay, Ph.D.  
NYU Medical Center, New York, N.Y.

11:10 - 11:35

- \* 28. Comparison of Structural and Functional Properties of  $\alpha_2$  Macroglobulin in Controls and Cystic Fibrosis Patients.

Emmanuel Shapira, M.D., Ph.D. and Henry L. Nadler, M.D.  
Tulane University School of Medicine, New Orleans, LA 70112 and  
Wayne State University, Detroit, MI.

Discussion (5 min.)

11:35 - 12:10

29. Protease Binding by  $\alpha_2$ M in Cystic Fibrosis and Controls

Derek Applegarth, M.D. and Michael Bridges, Ph.D.  
University of British Columbia, Vancouver, B.C.

General Discussion (15 min.)

12:10 - 2:00 LUNCH

2:00 - 4:35

#### SESSION 7. ENDOCYTOSIS OF $\alpha_2$ M

Chairperson: Lars Sottrup-Jensen, Ph.D.

2:00 - 2:25

- \* 30. Receptor-mediated endocytosis of  $\alpha_2$ M.

Ira H. Pastan, M.D. and Mark C. Willingham, M.D.  
National Cancer Institute, Bethesda, MD 20205

Discussion (5 min.)

2:25 - 2:50

- \* 31. Properties of Endocytic Vesicles Containing  $\alpha_2$ -Macroglobulin.

Frederick R. Maxfield, Ph.D. and Benjamin Tycko NYU Medical Center, New York, NY 10016

Discussion (5 min.)



2:50 - 3:25

- \*32. Receptor-mediated endocytosis of  $\alpha_2$ M-protease complexes: characterization of the receptor-recognition site and of the cellular receptor.

F. Van Leuven, Ph.D., P. Marymen, J.J. Cassiman, and  
H. Van den Berghe, M.D.  
University of Leuven, Leuven, Belgium.

General Discussion (15 min).

3:25 - 3:40 INTERMISSION

3:40 - 4:05

- \*33. The physiology of the macrophage receptor for  $\alpha_2$ -macroglobulin protease complexes.

Jerry Kaplan, Ph.D.  
University of Utah College of Medicine, Salt Lake City, UT 84132

Discussion (5 min.)

4:05 - 4:35

34. Clearance of  $\alpha_2$ -M enzyme complexes

Salvatore Pizzo, Ph.D.

General Discussion (10 min.)

4:35 - 5:10

#### SESSION 8. SUMMING UP

- \*35. Current Perspective on  $\alpha_2$ -Macroglobulin Chemistry and Biology

Richard D. Feinman, Ph.D.  
SUNY Downstate Medical Center, Brooklyn, NY 11203

General Discussion (15 min.)